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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/037,755 | 10/22/2001 | Young-Kwon Cho | 678-757 (P9993) | 7574 |
| 28249 | 7590 | 05/27/2005 | EXAMINER | |
| DILWORTH & BARRESE, LLP | | | FILE, ERIN M | |
| 333 EARLE OVINGTON BLVD. | | | | |
| UNIONDALE, NY 11553 | | | ART UNIT | PAPER NUMBER |
| | | | 2634 | |

DATE MAILED: 05/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/037,755

Applicant(s)

YOUNG-KWON CHO

Examiner

Erin M. File

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 October 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 7-9/1-18 are allowed.
- 6) ☒ Claim(s) 1-6, 10-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>6/14/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4, 10-13, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Na in view of Sivaprakasam and in further view of Grimwood et al.

Claims 1, 10, Na discloses a channel structure for transmitting burst pilot channels in a code division multiple access (CDMA) mobile communications system (abstract). Na further discloses pilot channels are modulated by spreading with the Walsh function with an offset 0 in the burst pilot processing part 60 (fig. 2, col. 5, lines 1-7) after this modulation the pilot channels are spread with the I- and Q-channel pilot PN sequences, respectively (fig. 2, col. 5, lines 18-20). Na fails to disclose burst pilot channel transmitting side information dependent on transmission data according to at least one of the phase, the complex channel and the orthogonal code. However, Sivaprakasam discloses a method in which a subcarrier is transmitted that is determined from the phase and amplitude information taken from the pilot signal (col. 12, lines 10-15) in a transmitting device. The use of sideband or subcarrier information in a

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transmitted signal is useful for accurate data transmission and synchronization.

Therefore it would be obvious to one skilled in the art at the time of invention to incorporate Sivaprakasam's subcarrier information coding into Na's invention.

Neither Na nor Sivaprakasam disclose choosing an orthogonal code for spreading from a plurality of orthogonal codes, however, Grimwood discloses a CDMA transmission method in which orthogonal spreading codes are used for spreading transmitted data (col. 14, lines 40-45). Grimwood teaches that different, orthogonal spreading codes are used to prevent interference between channels. Therefore it would be obvious to one skilled in the art to incorporate Grimwood's selection of an orthogonal code from a plurality of spreading codes in to the combined teachings of Sivaprakasam and Na.

Claim 2, inherits the limitations of Claim 1. Na discloses the pilot burst duration is adjustable set to 10, 20, or 40 Modulation Symbols (MS) (col. 6, lines 5-6). Na fails to disclose the modulated pilot symbol has a length of 128 chips, however, at the time of invention, it would have been obvious to a person of ordinary skill in the art to adjust pilot length of 128 chips. Applicant has not disclosed using this particular code length provides an advantage, is used for a particular purpose, or solves a stated problem. Further, the specification discloses that the burst pilot channel can vary from 64 to as many as 1,024 chips. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with pilot bursts of varying sizes. Therefore, it would have been obvious to

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one of ordinary skill in this art to modify Na to obtain the invention as specified in Claim 2.

Claims 3, 12, inherit the limitations of Claims 1, 10 respectively. Na fails to disclose the modulated pilot symbol has a length of 64 chips. However, it would be obvious to one skilled in the art to use a modulated pilot symbol of a length of 64 chips as is described in Claim 2 above.

Claims 4, 13, inherit the limitations of Claims 1, 10 respectively. Na further discloses the use of a separate in-phase and quadrature channels in his spreader (fig. 2).

Claim 16, Na discloses a channel structure for transmitting burst pilot channels in a code division multiple access (CDMA) mobile communications system (abstract). Na further discloses the pilot channels are spread with PN sequences (fig. 2, col. 5, lines 18-20). Na fails to disclose burst pilot channel transmitting side information. However, Sivaprakasam discloses a method in which a subcarrier is transmitted that is determined from the phase and amplitude information taken from the pilot signal (col. 12, lines 10-15) in a transmitting device. The use of sideband or subcarrier information in a transmitted signal is useful for accurate data transmission and synchronization. Therefore it would be obvious to one skilled in the art at the time of invention to incorporate Sivaprakasam's subcarrier information coding into Na's invention. Neither Na

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nor Sivaprakasam disclose choosing an orthogonal code for spreading from a plurality of orthogonal codes, however, Grimwood discloses a CDMA transmission method in which orthogonal spreading codes are used for spreading transmitted data (col. 14, lines 40-45). Grimwood teaches that different, orthogonal spreading codes are used to prevent interference between channels. Therefore it would be obvious to one skilled in the art to incorporate Grimwood's selection of an orthogonal code from a plurality of spreading codes in to the combined teachings of Sivaprakasam and Na.

3. Claims 5, 6, 14, 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Na in view of Sivaprakasam.

Claims 5, 14, Na discloses a channel structure for transmitting burst pilot channels in a code division multiple access (CDMA) mobile communications system (abstract). Na further discloses pilot channels are modulated burst pilot processing part 60 (fig. 2, col. 5, lines 1-7) after this modulation the pilot channels are spread with the I- and Q-channel pilot PN sequences, respectively (fig. 2, col. 5, lines 18-20). Na fails to disclose burst pilot channel transmitting side information. However, Sivaprakasam discloses a method in which a subcarrier is transmitted at a phase that is determined from the phase and amplitude information taken from the pilot signal (col. 12, lines 10-15) in a transmitting device. The use of sideband or subcarrier information in a transmitted signal is useful for accurate data transmission and synchronization. Therefore it would be

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obvious to one skilled in the art at the time of invention to incorporate

Sivaprakasam's subcarrier information coding into Na's invention.

Claim 6, 15, Na discloses a channel structure for transmitting burst pilot channels in a code division multiple access (CDMA) mobile communications system (abstract). Na further discloses pilot channels are modulated burst pilot processing part 60 (fig. 2, col. 5, lines 1-7) after this modulation the pilot channels are spread with the I- and Q-channel pilot PN sequences, respectively (fig. 2, col. 5, lines 18-20). Na fails to disclose burst pilot channel transmitting side information. However, Sivaprakasam discloses a method in which a subcarrier is transmitted that is determined from the phase and amplitude information taken from the pilot signal (col. 12, lines 10-15) in a transmitting device. The phase and amplitude of the pilot signal could be used to determine the complex channel used for transmitting side information. The use of sideband or subcarrier information in a transmitted signal is useful for accurate data transmission and synchronization. Therefore it would be obvious to one skilled in the art at the time of invention to incorporate Sivaprakasam's subcarrier information coding into Na's invention.

4. Claims 7-9, 17, 18 are allowable in view of the known prior art.

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5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erin M. File whose telephone number is (571)272-6040. The examiner can normally be reached on M-F 9:30-6:00.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on (571)272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

1.21.2005

Erin M. File

EMF


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